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Cheltenham - TerraCotta water quality REPORT

DRINKING WATER QUALITY
NEW ONTARIO DRINKING WATER REGULATION

Ontario Regulation 459/00

This report has been written to provide you, the consumer, with information regarding drinking water quality and resources.

By becoming well-informed consumers, you also become our best allies in maintaining and promising the highest quality of drinking water possible.

The province's new Drinking Water Protection Regulation requires water works owners to publish reports to consumers on water quality. The Region of Peel's Water and Wastewater division provides you with this report four times per year.

The Water Quality report summarizes all the results of all of the test parameters sampled in each quarter.

Protecting Our Drinking Water

Drinking water regulations set mandatory and stringent standards and rules to protect the quality of Ontario's drinking water. These include regular sampling and testing of drinking water, disinfection and treatment to destroy disease-causing organisms, clear notification requirements when there are adverse test results, and the posting of public notices for water that is untested or unsafe.

The regulation makes it clear what the rules are and that the Region of Peel as the supplier of drinking water will be held accountable. It supports the public's right to timely and accurate information on drinking water quality, so that people can have confidence that their water is safe.

Adverse Water Notification Protocol

If a water sample in your community is found to be adverse, it is mandatory that the testing laboratory contact the Region of Peel, the Ministry of the Environment Spills Action Centre (SAC), and the Regional Health department. The Region of Peel then must contact the Spills Action Centre and the Regional Health department. The adverse result must be reported verbally to the individual responsible for water quality issues. The water works operator also takes immediate action including resampling to confirm whether there is truly a problem. Sample collection errors may cause adverse sample test results.

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Region of Peel
Working for you

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Cheltenham-Terra Cotta Drinking Water

Delivery – Source – Treatment

Cheltenham-Terra Cotta has a service population of about 450 people supplied by a municipally owned waterworks system. One production well and one stanby well provide the groundwater supply. The pumping capacity of the production well is 1.5 million litres per day (300 thousand gallons per day). The groundwater drawn from the well is disinfected with chlorine. The natural iron and manganese concentration in the groundwater is high. An iron-manganese removal system oxidizes the iron and manganese with potassium permanganate causing the iron and manganese to precipitate out of solution. A large greensand filter removes the oxidized iron and manganese particles from the water. The treated water is delivered to consumers throutgh the water distribution system. Surplus water is stored in a 221 thousand-litre (49 thousand-gallon) inground reservoir connected to the water distribution system.

Well No.1 and 2 are drilled wells located in a concrete block treatment building each with a submersible well water pump with a rated capacity of 6.2 L/s (82 GPM).

Fluoridation is not carried out at the Cheltenham wells. The natural average concentration of fluoride in the municipal wells in Cheltenham-Terra Cotta is 0.08 – 0.09 milligrams per litre. The provincial standards for water works practising fluoridation is 0.5 - 0.8 mg/L.

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Water Quality Terms

MAC – Maximum Acceptable Concentration

MAC objectives are established when substances are present above levels that are known or suspected to have an adverse effect on health.

IMAC – Interim Maximum Acceptable Concentration

IMAC objectives are established when there is not enough information to set a MAC with certainty.

AO – Aesthetic Objectives

Established for substances that affect the taste, smell and colour of water or interfere with water quality control practices. These substances do not affect health.

OG – Operational Guidelines

Established for substances that need to be controlled to ensure the efficient treatment and distribution of water.

BDL – Below Detection Limit

When the amount of substance present in water is so small that the equipment used cannot measure it, then that substance is below the detection limit.

mg/l – Milligram per litre

This is a measure of the concentration of a parameter in water. Also known as parts per million (ppm).

ug/l – Microgram per litre

This is a measure of the concentration of a parameter in water. Also known as parts per billion (ppb)

ng/l – Nanogram per litre

This is a measure of the concentration of a parameter in water. Also known as parts per trillion (ppt)

Parameter

This is a substance that we sample and analyze for in the water.

NTU – Nephelometric Turbidity Units

A measure of the amount of particles in water.

TCU – True Colour Units

$CaC0_3$ – Calcium carbonate

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Our Water is Safe to Drink

All sources of drinking water (both tap and bottled) contain small amounts of dissolved substances. As water travels over the surface of the land or through the ground, it dissolves naturally occurring minerals and other substances. The presence of these substances does not necessarily mean the water poses a health risk.

Some people may be more vulnerable to substances in drinking water than the general population. Immuno-compromised people, such as people who have cancer and are undergoing chemotherapy, people who have undergone organ transplants, people with HIV / AIDS or other immune disorders and some elderly people and infants can be particularly at risk from infections. For personal health advice, please contact your health care provider.

Regulatory Compliance

The Region of Peel operates municipal water supply systems in accordance with provincial regulations:

- Analytical tests to monitor water quality are conducted by a laboratory audited by the Canadian Association for Environmental Analytical Laboratories (CAEAL) and accredited by the Standards Council of Canada (SCC). Accreditation ensures that the laboratory has acceptable laboratory protocols and assurances of the proficiency of the analysts performing the tests.

- Operation by Licensed Operators. Competent and licensed staff operates and maintains the water treatment facilities and water distribution systems. Operator certification is regulated under the Ontario Water Resources Act (OWRA) Regulation 435/93. Licensing means that an individual meets the education and experience requirements and has successfully passed certification examinations.

- The Region of Peel adheres to all water sampling and analysis requirements under OWRA Regulation 459/00, the Ontario Drinking Water Standards, Permit-to-take-Water and Certificate of Approval conditions.

- The Region of Peel adheres to Ontario Ministry of the Environment Guidelines and Procedures to ensure the protection of the public health and operational excellence.

Monitoring the Water Treatment Process

Process performance is measured continuously by various field instruments such as pressure transmitters, chlorine and turbidity analysers. Instruments collect the information and send it directly to the Supervisory Control and Data Acquisition System (SCADA).

All water and wastewater treatment facilities and pumping stations in the Region of Peel are continuously controlled and monitored by a SCADA. This computer system is programmed to make routine process decisions, collect performance data, automatically generate various reports and identify alarm conditions.

Required Testing

The Ontario Drinking Water Regulation established by the Ministry of the Environment sets the sampling requirements for municipal water systems.

What could be in your water?

Raw water directly from the well may contain substances that have to be treated before it is delivered to the consumer. The following is a description of the various substances that may be present.

Microbiological parameters such as bacteria, algae, viruses, protozoa, and other living organisms. Microbiological quality is the most important aspect of drinking water quality because of its association with dangerous water-borne diseases.

Inorganic parameters such as substances dissolved in the water from both natural and manufactured sources.

Organic parameters can be naturally occurring, but most organics are synthetic. They originate from industrial discharges and agricultural run off. Pesticides/herbicides are also in this group and can originate from both rural and urban areas.

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CHARACTERISTICS OF CHELTENHAM-TERRA COTTA WATER

(Average values)

Hardness	**350 mg/l or 24 grains/Imp.gal.**
pH	**7.5**
Fluoride	**0.08 mg/l**
Iron	**1.80 mg/l**
Alkalinity	**304 mg/l**
Turbidity	**0.20 NTU**
Colour	**<5 TCU**

WATER CHARACTERISTICS

Specific Gravity: 1.00 Water reaches its highest density at 4 degrees Celsius. It becomes less dense at higher and lower temperatures.

Water weights: 1kg/l, 1000 kg/m^3,
10 lb / imperial gallon
62.4 lb/ft^3 at 4°C

Pressure: 1 psi = 2.31 ft of water
1 ft of water = 0.433 psi
1 m of water = 1.42 psi
1 psi = 6.895 KiloPascals

Water boils at 100°C / 212°F

Freezes at 0°C / 32°F

WATER CONSUMPTION – Cheltenham-Terra Cotta 2001

Total Water Used Yearly	**69,944 m^3**
Total Annual consumption per person	**168.54 m^3**
Average daily consumption per person	**0.46 m^3**
Maximum Day Production	**446.0 m^3**
Minimum Day Production	**5.1 m^3**

1m^3 equals 220 Imperial Gallons

Cheltenham-Terra Cotta Total Water used was 15,385,512 Imp gallons.

Cheltenham-Terra Cotta Annual per Capita was just over 37,074 Imp gallons which would equal 741 baths a year.

If you were a swimming-pool builder and a customer asked you to build a pool that would hold a million-gallons. You would need to build a pool about 267 feet long (almost as long as a football field), 50 feet wide, and 10 feet deep.

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Water and Wastewater Division Frequently Asked Questions

1. Is the water hard?

Hardness is typically dissolved calcium and magnesium in the water measured as calcium carbonate. The hardness ofdrinking water is between 350 and 390 mg/l or 24 to 26.7 grains per gallon of calcium carbonate. Although considered hard, it is still acceptable for domestic purposes.

2. Should I buy a water softener?

The purchase of a water softener is based mostly on personal preferences. Soapsuds are formed easier with soft water; therefore you use less detergent. The use of a water softener also reduces the formation of hardness scale in pipes and hot water tanks. Some consumers do not like the feel of soft water. For example, after rinsing you may still feel a soap film on your skin if you used soft water.

3. What are those small white flakes in my water?

Those flakes are scales caused by hardness. This is normal and can be reduced by cleaning your faucet aerators and/or your hot water tank regularly.

4. Why does the water sometimes look yellow or tea like?

Yellow water or water with colour is a common occurrence. The groundwater throughout Caledon has a high **IRON** content. At the well house the Region of Peel sequesters the iron with sodium silicate, which keeps the iron in solution and the water clear. However if an area has a low water usage, iron may start to appear as yellow or tea like water. Iron can also settle out in the bottom of the pipe, and any sudden surges in water flow may stir up this sediment and cause dirty water. This is an aesthetic not a health concern. Please notify the Region of the colour occurrence so we can correct the matter.

5. Why does the water sometimes look cloudy or milky?

Cloudy or milky water is caused by air trapped in the water pipes. Air can be trapped when by a main breaks, low reservoir levels or improper watermain valving during construction projects. If the water is left to sit, it will clear. This is just an aesthetic not a health concern. If cloudy water does persists, Please notify the Region so we can investigate the matter.

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6. Why does the water have a blue tinge to it?

The appearance of a blue tinge to your water suggests the corrosion of your in house copper pipes. The blue colour is formed by the presence of dissolved copper in your water. You should call a plumber to look into your situation.

7. Is fluoride added to my water?

The Region of Peel does not add fluoride to ground water supplies in the Caledon area. Any fluoride in the water is naturally occurring.

8. What can be done about chlorine odours and taste in the water?

Chlorine is necessary to control disease-causing organisms. To minimize the chlorine taste and smell in the water, the following measures can be taken:

- Fill a pitcher and let it stand in the refrigerator overnight.
- Blend the water for five minutes or pour it between containers about 10 times.
- Boil the water, let it cool, and then refrigerate it.

9. Why does the water smell and taste bad?

Drinking water in the Region of Peel is of very high quality but you may sometimes notice a slight taste or smell, particularly of chlorine. If you do there is no cause to worry. But, if you notice a particularly bad or strong smell or taste or you notice a smell or taste for the first time. Please notify the Region so we can investigate.

Any one of the following could cause people to notice a slight smell or a taste or a change in the smell or taste of their drinking water:

- The use of chlorine as a disinfectant
- Moving from one community to another
- A change in your water supply
- Seasonal changes
- Your plumbing
- Any disturbance in the water main
- Cross-connections

10. What can I do if I am sensitive to tastes or smells?

Cooling tap water in the fridge will improve the taste. However, if you feel a point-of-use treatment system such as a filter system is necessary remember to follow all of the manufacturer's instructions carefully. Most point-of-use treatment systems remove minerals and chlorine. If improperly maintained, these systems can deteriorate water quality.

11. Why is my kettle stained or look black inside?

The presence of calcium and manganese in the water will stain a kettle. Especially when water is boiled, this helps calcium and manganese to deposit on the element and the inner sides of the kettle. This is most noticeable in new homes or subdivisions where you have plenty of new plumbing.

Where can I get more information about drinking water and other related issues?

Ontario Ministry of the Environment
Phone: 416-325-4000
Toll Free: 1-800-565-4923
Web site: www.ene.gov.on.ca

Ontario Clean Water Agency (OCWA)
1 Yonge St., Ste. 1700
Toronto, ON M5E 1E5
Toll Free: 1-800-662-6292
Web site: www.ocwa.com

Environment Canada
Inquiry Centre
Phone: 819-997-2800
Toll-Free: 1-800-668-6767
Web Site: www.ec.gc.ca

Copies of this report may be obtained from your local public library, school board, community centre or municipal office.

This report is also available on our Web site at www.region.peel.on.ca We welcome any questions or comments you may have.

HOW TO CONTACT US:

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10 Peel Centre Dr.
Brampton ON L6T 4B9
Phone: 905-791-7800 Ext. 4685 or 4494
E-mail: info@region.peel.on.ca
Call for inquiries regarding water quality, taste and odour, and coloured water.

Our Vision
"To be recognized as the industry leader in Public Works"